

SPINDLE MOTION ERROR TEST SUMMARY REPORT

Spindle ID: DFS0021B

Manufacturer: Bell-Everman

Model: DDT200MT

Serial Number: 1994

Test Conditions:

Axis Orientation: Vertical

Drive: Internal Motor

Controller: Copley Controls 5224AC

Rotation Rate: 2.23 rpm

Date of Test: February 25 & 27, 2012

Date of Report: February 29, 2012

Equipment and Settings:

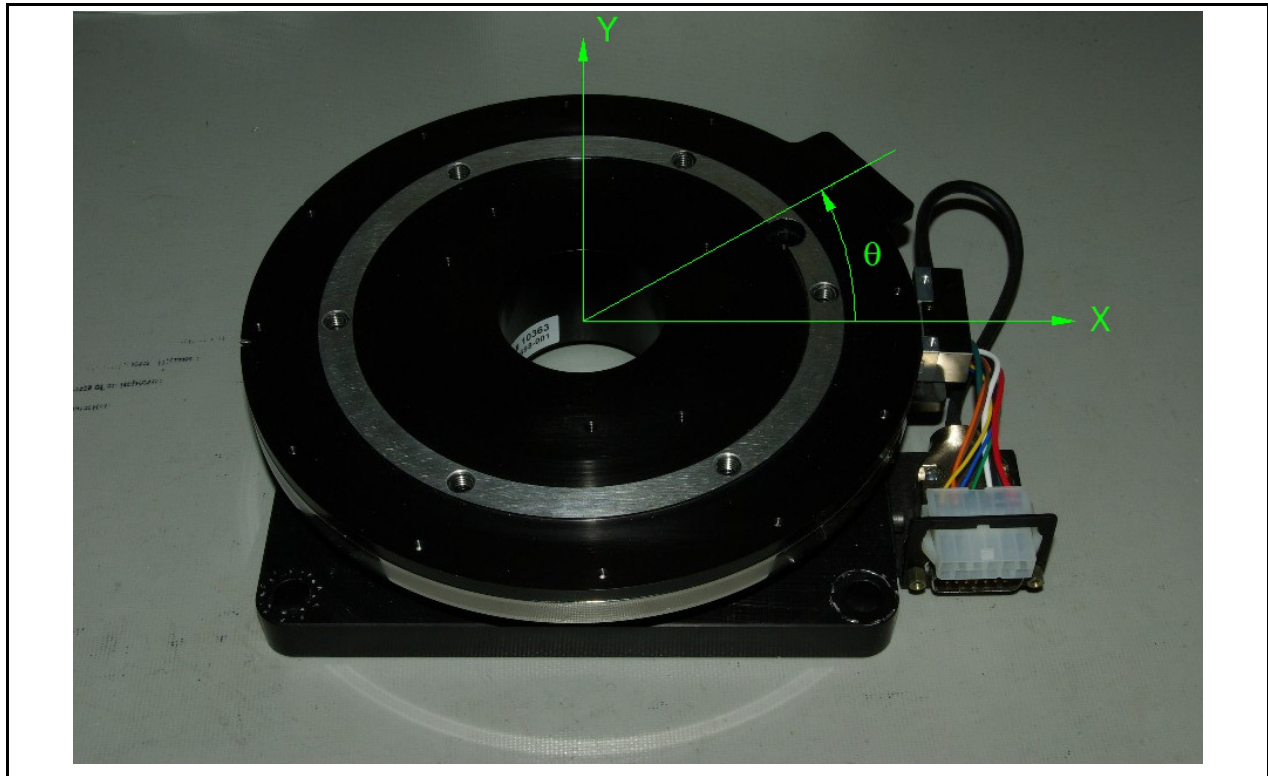
4 LVDT Sensors; two opposed pairs

Low Pass Filter: 62 cycles per turn

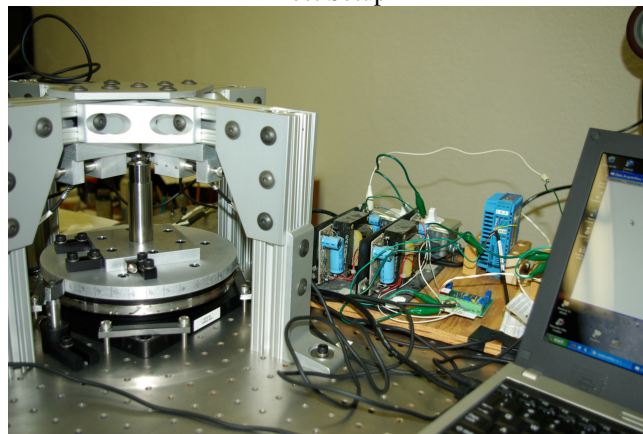
Data Rate: 100 samples/sec, each channel

Test Artifacts: 1 inch diameter; 10 μ inch
sphericity

Definition of Coordinate Axes

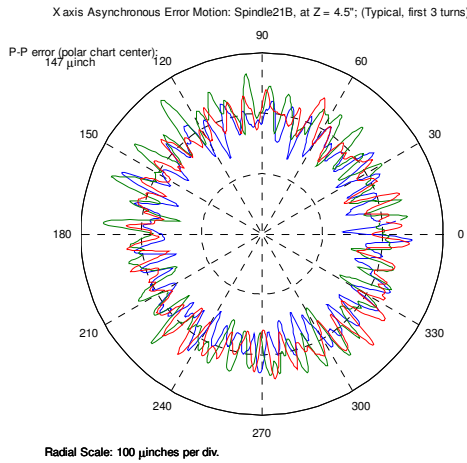


Test Setup

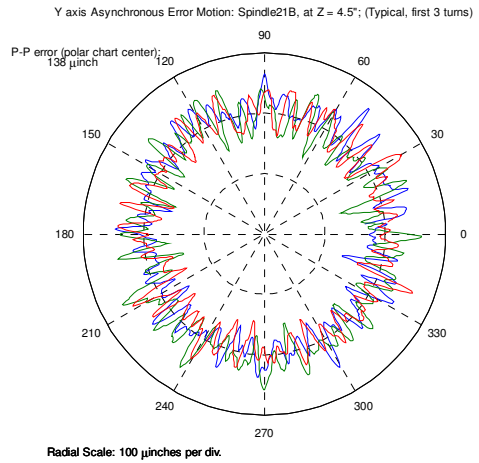


Asynchronous Motion Error

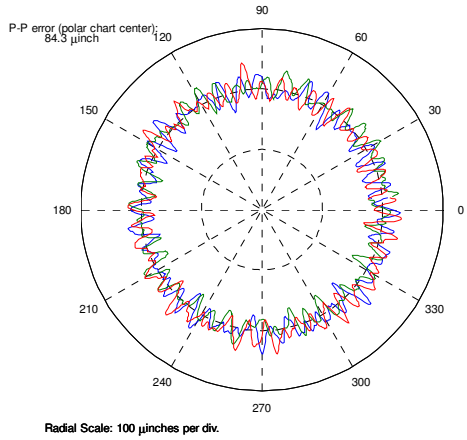
X axis



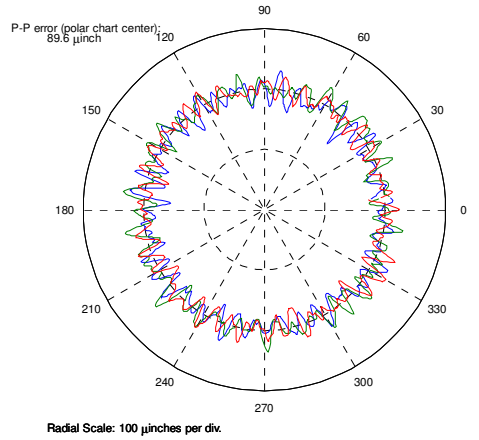
Y axis



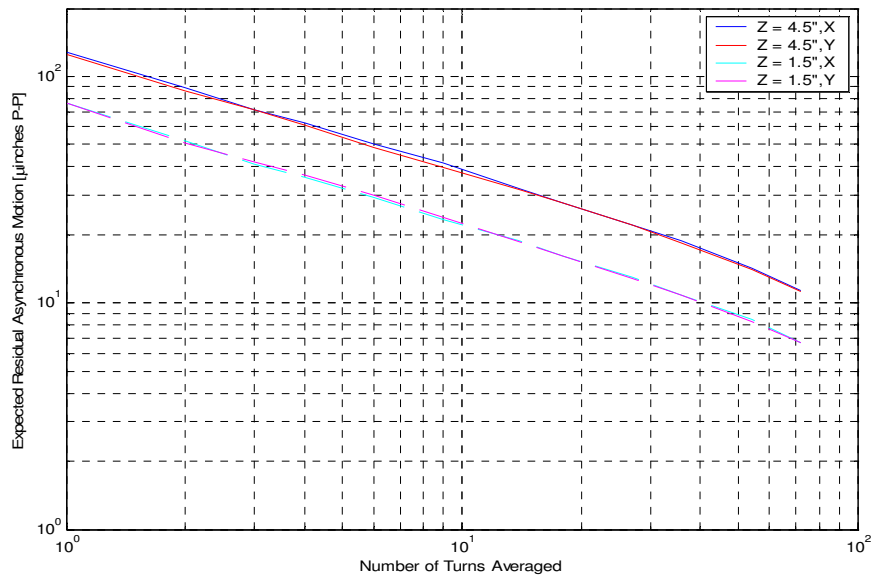
X axis Asynchronous Error Motion: Spindle21B, at Z = 1.5"; (Typical, first 3 turns)



Y axis Asynchronous Error Motion: Spindle21B, at Z = 1.5"; (Typical, first 3 turns)

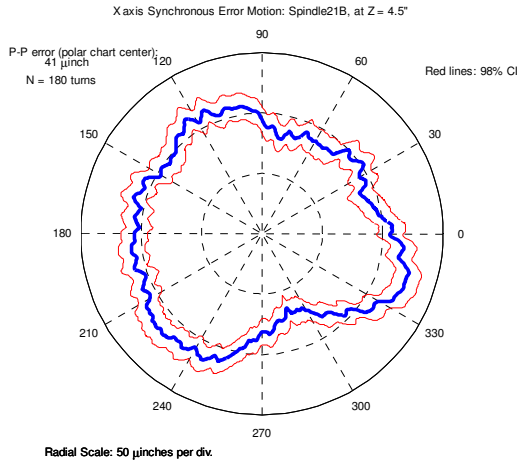


Averaging Asynchronous Motion: Spindle 21B

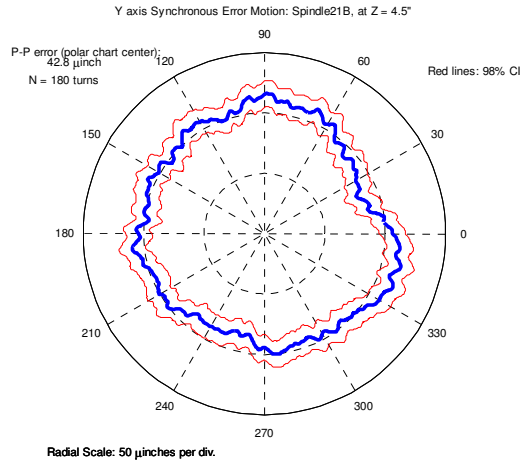


Synchronous Motion Error

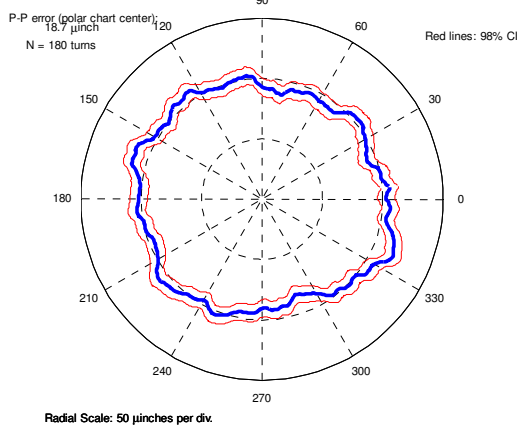
X axis



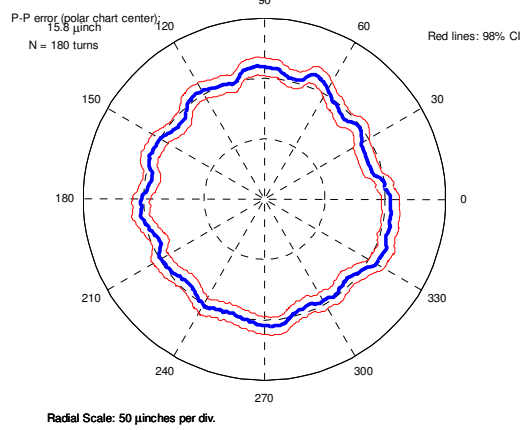
Y axis



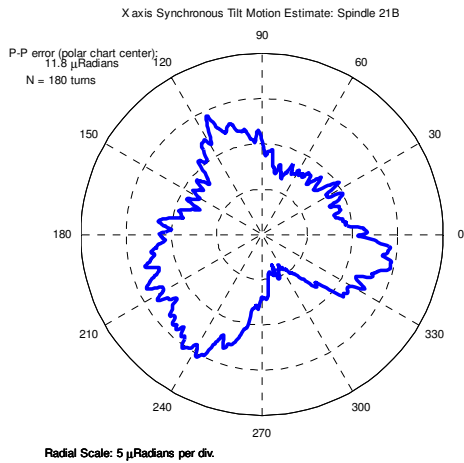
X axis Synchronous Error Motion: Spindle21B, at Z = 1.5"



Y axis Synchronous Error Motion: Spindle21B, at Z = 1.5"



$[\theta_y]$



$[\theta_x]$

